

Instructor: Leopoldo P. Franca

NAME: _____

TEST # 1:

Please show all your work in the test. Guessed answers are NOT acceptable. Open textbook. You may use calculators. Good luck!

(25 pt) 1) Solve $\frac{dy}{dx} = e^{x+y}$.

(25 pt) 2) Solve $\sin y \cos x dx + (y + \cos y \sin x) dy = 0$, $y(0) = 1$.

(25 pt) 3) Solve $x \frac{dy}{dx} + 2y = \frac{\sin x}{x}$, $y(2) = 1$.

(25 pt) 4) Suppose the temperature of a cup of coffee is 200°F when freshly poured. One minute later it has cooled to 190°F in a room at 70°F . How long a period must elapse (assuming Newton's law of cooling to apply) before the coffee reaches a temperature of 150°F ?